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EXAMINER

NG, FAN

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4145

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/568,280	Applicant(s) TANIGUCHI ET AL.	
	Examiner FAN NG	Art Unit 4145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/15/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Foreign priority data is not grant, unless translation of the foreign patent is provide.

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

1. Claims 8-10 are objected to because of the following informalities: The office objects to the usage of “capable of” in claim 8-10 respectively because “capable of” can be interpreted as a non-positive claim recitation or intended use. The office recommends that the applicant amend the claim to be a positive limitation or clarify on the record that “capable of” can be interpreted as a positive claim.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:
 - a. Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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- b. Claims 19-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.
- c. Claims 19-20 are directed to receiving method. The claim language does not state any physical structure to perform the method. A method must have physical structure defined in the claim limitation in order to be statutory.
- d. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

- a. A person shall be entitled to a patent unless –
- b. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 17-19 are rejected under 35 U.S.C. 102(e) as being anticipated over Goeddel (6546026)

4. As per claim 1, **Goeddel teaches** a diversity receiving apparatus for receiving signals carrier-modulated by a digital multilevel modulation system by a plurality of branches (**Fig. 4, r(0)-r(L-1) are receiving branches and col. 3, line 41-42, QAM was used, thus signal is multilevel modulation**) and for demodulating the signals (**s(0) to s(L-1) together with #54 are demodulation apparatus**), the diversity receiving apparatus comprising:

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5. a plurality of demodulation units each provided for each of the plurality of branches **(s(0) to s(L-1) together with #54 are demodulation apparatus)**, the plurality of demodulation units each outputting complex information indicating a signal point of each of the signals received by the plurality of branches **(col. 3, line 41-42, since QAM was used the output signal is complex information)**; a master branch determination unit for determining a master branch which is used as a reference in synchronizing an output timing among symbols of the signals received by the plurality of branches **(Fig. 6, #308 and col. 9, line 20-24)**, and for outputting a signal indicating a branch determined to be the master branch **(Fig. 6, #308 and col. 9, line 20-24: since a reference (master) signal is selected and used for time synchronization as reference, thus the system must know which one it is)**; a timing adjustment unit for receiving the signal indicating the branch determined to be the master branch from the master branch determination unit **(Fig. 6, #308 and col. 9, line 20-24: since a reference (master) signal is selected and used for time synchronization as reference, thus the system must know which one it is)**, and for adjusting a timing of synthesizing the signals received by the plurality of branches **(col. 9, line 25-27)** by synchronizing the output timing between a symbol of the complex information received from the demodulation unit of the master branch **(Fig. 6, and col. 9, line 25-27)** and a symbol of the complex information received from the demodulation unit of a branch other than the master branch out of the plurality of antennas **(Fig. 6, and col. 9, line 25-29)**; and a synthesis unit for synthesizing the signals received by the plurality of branches by using

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the complex information that has been timing-adjusted by the timing adjustment unit
(Fig. 6, and col. 9, line 27-30).

6.

As per claim 2, **Goeddel teaches** The diversity receiving apparatus of claim 1 further comprising: a transmission parameter storage unit, wherein the plurality of demodulation units each extract a transmission parameter containing information necessary for demodulation from each of the signals received by the plurality of branches **(col. 4, line 38-41: offset is the transmission parameter, it is calculate for each of the plurality of branches. These offset is necessary for demodulation because without synchronization data symbol can not be accurate estimated),**

7. and each output the transmission parameter in addition to the complex signal **(offset is addition to complex signal, complex signal is what received and offset is a parameter that calculated from received signal),** and the transmission parameter storage unit stores the transmission parameters outputted from the plurality of demodulation units **(offset is stored in memory).**

As per claim 3, **Goeddel teaches** the diversity receiving apparatus of claim 1 further comprising: a plurality of quadrature detection units each provided for each of the plurality of branches **(col. 9, line 14-16: signal are demodulated to base band and containing I and Q components, note this performed for every branch and I and Q components is extract from quadrature detection),**

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8. the plurality of quadrature detection units each outputting a signal indicating synchronization establishment of each of the signals received by the plurality of branches (**col. 9, line 14-16: after demodulated to I and Q components, the signal are ready for synchronization, and col. 9, line 20-30 indicated how the synchronization is done**),

9. wherein the master branch determination unit determines a branch having the quadrature detection unit that is the first to input the signal indicating synchronization establishment to the master branch determination unit to be the master branch (**col. 18–20: master branch is selected, note, every branch has a quadrature detection unit, otherwise the signal is not in the baseband (bring down to I and Q level), all the process in col. 9, line 20-30 is done in the base band**).

10. As per claim 17, **Goeddel teaches** the diversity receiving apparatus of claim 2, **Goeddel teaches** wherein the transmission parameter storage unit stores the transmission parameter that is the first to be outputted from the plurality of demodulation units after channel selection (**col. 4, line 38-41: offset is the transmission parameter, it is calculate for each of the plurality of branches, it is first parameter output after channel selection, because a channel must be select first, after that, offset can be calculated**), the transmission parameter being used to demodulate the signal received by a corresponding one of the plurality of branches (**each of plurality of branch has its own offset, one offset is corresponding to one of the plurality of branches, and**

offset is used to demodulate (synchronization) the signal).

As per claim 18, **Goeddel teaches** the diversity receiving apparatus of claim 2, **Goeddel teaches** wherein the transmission parameter storage unit stores the transmission parameter that is the first to be outputted from the plurality of demodulation units after the reception is resumed (**col. 4, line 38-41: offset is the transmission parameter, it is calculate for each of the plurality of branches, it is inherent, every thing can happen when reception is resumed, since if the reception is not resumed, there is no data to be work with**), the transmission parameter being used to demodulate the signal received by a corresponding one of the plurality of branches (**each of plurality of branch has its own offset, one offset is corresponding to one of the plurality of branches, and offset is used to demodulate (synchronization) the signal**).

As per claim 19, **Goeddel teaches** a diversity receiving method for receiving signals carrier-modulated by a digital multilevel modulation system by a plurality of branches (**Fig. 4, $r(0)$ - $r(L-1)$ are receiving branches and col. 3, line 41-42, QAM was used, thus signal is multilevel modulation**) and for demodulating the signals (**$s(0)$ to $s(L-1)$ together with #54 are demodulation apparatus**), the diversity receiving method comprising: a demodulation step for outputting complex information indicating signal points of the signals received by the plurality of branches (**col. 3, line 41-42, QAM was used, thus signal is multilevel modulation, and complex information**); and a

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master branch determination step for determining a master branch which is used as a reference in synchronizing an output timing among symbols of the signals received by the plurality of branches (**Fig. 6**), and for outputting a signal indicating a branch determined to be the master branch (**Fig. 6, #310: it must tell the cross correlation unit which is the reference signal (master branch), otherwise cross correlation can't be done**).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

12. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goeddel (6546026) as applied to claim 1 above and further in view of Laroia (6961364).

14.

As per claim 4, **Goeddel teaches** the diversity receiving apparatus of claim 1 further comprising:

15. Goeddel teaches ... plurality of branches... (Fig. 3)

16. Goeddel doesn't teach a plurality of tuners each provided for each of the ..., the plurality of tuners each extracting a signal at specific frequencies from each of the signals received by the ..., and each outputting information about average electric

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power of each of the signals received by ..., wherein the master branch determination unit determines a branch having a highest average electric power of the signal received to be the master branch.

17. **Laroia teaches** a plurality of tuners each provided for each of the ..., the plurality of tuners each extracting a signal at specific frequencies from each of the signals received by the ... **(Fig. 6: #602, antenna must turn to specific frequency to receive data, otherwise nothing can be received)**, and each outputting information about average electric power of each of the signals received by ... **(col. 5, line 55-56)**, wherein the master branch determination unit determines a branch having a highest average electric power of the signal received to be the master branch **(col. 5, line 55-58)**.

18. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Laroia into Goeddel, since Goeddel suggests select a reference signal and do synchronization using this reference signal and Laroia suggests the beneficial use of the strongest average signal to estimation something, such as use strongest signal as reference is obvious, because it usually represent the more accurate signal, they are in the analogues art of communication protocol.

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19. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goeddel (6546026) as applied to claim 1 above and further in view of Yamaguchi (5889438).

20. As per claim 5, **Goeddel teaches** the diversity receiving apparatus of claim 1 further comprising: **Goeddel teaches** a plurality of tuners each provided for each of the plurality of branches, the plurality of tuners each extracting a signal at specific frequencies from each of the signals received by the plurality of branches (**Fig. 5, #202, antenna must turn to specific frequency to receive data, otherwise nothing can be received**),

21. ...signals received by the plurality of branches ...the master branch determination unit determines a branch having ... the signal received to be the master branch (**Fig. 6, #308**).

22. **Goeddel doesn't teach** and each outputting information about fluctuation in electric power of each of the ... wherein,... least fluctuation in the electric power of ...

23. **Yamaguchi teaches** and each outputting information about fluctuation in electric power of each of the ... wherein,... least fluctuation in the electric power of (**col. 2, line 53-55**)...

Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Yamaguchi into Goeddel, since

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Goeddel suggests select a reference signal and do synchronization using this reference signal and Yamaguchi suggests the beneficial to select the minimum variance filter, such as select the minimum variance of anything means more stable, and in wireless communication, stable system or signal is more preferred, they are in the analogues art of communication protocol.

24.

As per claim 6, **Goeddel teaches** the diversity receiving apparatus of claim 1,

25. **Goeddel teaches** and the master branch determination unit determines a branch having ... from the demodulation unit to be the master branch (**Fig. 6**).

Goeddel doesn't teach wherein the plurality of demodulation units each calculate an average amount of noise from each of the signals received by the plurality of branches and each output the average amount of noise; ... least average amount of noise outputted...

26. **Yamaguchi teaches** wherein the plurality of demodulation units each calculate an average amount of noise from each of the signals received by the plurality of branches and each output the average amount of noise; ... least average amount of noise outputted... (**col. 2, line 53-55, note, minimum variance is average noise, because noise produce variance, and variance is statistical term it is produce over a period of time, single value can't be used to calculate variance**)

27. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Yamaguchi into Goeddel, since

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Goeddel suggests select a reference signal and do synchronization using this reference signal and Yamaguchi suggests the beneficial to select the minimum variance filter, such as select the minimum variance of anything means more stable, and in wireless communication, stable system or signal is more preferred, they are in the analogues art of communication protocol.

28. Claims 7, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goeddel (6546026) as applied to claim 1 above and further in view of Bechman (6359585).

29.

As per claim 7, **Goeddel teaches** the diversity receiving apparatus of claim 1,

30. **Goeddel teaches** ... plurality of branches...(Fig. 3)

31. **Goeddel doesn't teach** wherein the ... each have an antenna with directional characteristics: and the master branch determination unit determines a branch having an antenna with directional characteristics in a direction of a transmitting station to be the master branch.

32. **Bechman teaches** wherein the ... each have an antenna with directional characteristics (**Fig. 6, #602 directional antenna**): and the master branch determination unit determines a branch having an antenna with directional characteristics in a direction of a transmitting station to be the master branch (**Fig. 6, #602-608: direction of the directional antenna is direct to the transmitting station, note, master branch is determined by strongest power or least noise power, and**

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every branch has directional antenna, thus directional antenna is not unique to master branch, furthermore, the prior teach the claim because only thing new is the use of directional antenna for each branch).

33. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Bechman into Goeddel, since Goeddel suggests select a reference signal and do synchronization using this reference signal and Bechman suggests the beneficial of use directional antenna and direct the antenna toward the direction of transmitting station, such as it is obvious to combine because the max. power will be received in the direction of transmitting, they are in the analogues art of communication protocol.

34. As per claim 10, **Goeddel teaches** the diversity receiving apparatus of claim 1 further comprising: **Goeddel teaches** a reader capable of reading a recording medium **(Fig. 6, #310: reference signal is being used for estimation, it needs to be read from memory. The received signal must be store in memory)** which stores the information about master branch determination **(Fig. 6, #308: master branch is determined and stored),**

35. ...based on the information about master branch determination that has been read from the recording medium by the reader **(Fig. 6, #310: reference signal is being used for estimation, it needs to be read from memory. The received signal must**

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be store in memory).

Goeddel doesn't teaches wherein the master branch determination unit determines a branch having an antenna with directional characteristics in a direction of a transmitting station to be the master branch

36.

37. **Bechman teaches** wherein the master branch determination unit determines a branch having an antenna with directional characteristics in a direction of a transmitting station to be the master branch (**Fig. 6, #602: directional antenna, #608: determining an orientation of a directional antenna**), ...

38. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Bechman into Goeddel, since Goeddel suggests select a reference signal and do synchronization using this reference signal and Bechman suggests the beneficial of use directional antenna and direct the antenna toward the direction of transmitting station, such as it is obvious to combine because the max. power will be received in the direction of transmitting, they are in the analogues art of communication protocol.

39. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goeddel (6546026), Bechman (6359585) as applied to claim 7 above and further in view of Kreft (6240368).

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40.

As per claim 8, **Goeddel and Bechman teach** the diversity receiving apparatus of claim 7 further comprising:

41. Goeddel doesn't teach a GPS capable of locating a position of a receiving apparatus; ... wherein the master branch determination unit selects an antenna with directional characteristics in a direction of a transmitting station based on the GPS and the gyro sensor, and determines the antenna to be the master branch

42. Bechman teaches a GPS capable of locating a position of a receiving apparatus (**Fig. 6**);... wherein the master branch determination unit selects an antenna with directional characteristics in a direction of a transmitting station based on the GPS and the gyro sensor, and determines the antenna to be the master branch (**Fig. 6, GPS is used to direct antenna toward the transmitting antenna, note, master branch is determined by strongest power or least noise power, and every branch has directional antenna, thus directional antenna is not unique to master branch, furthermore, the prior teach the claim because only thing new is the use of directional antenna for each branch and GPS**).

43. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Bechman into Goeddel, since Goeddel suggests select a reference signal and do synchronization using this reference

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signal and Bechman suggests the beneficial of use directional antenna and direct the antenna toward the direction of transmitting station, such as it is obvious to combine because the max. power will be received in the direction of transmitting, they are in the analogues art of communication protocol.

44. Goeddel and Bechman do not teach and a gyro sensor capable of locating a direction of a receiving apparatus

45. Kreft teaches and a gyro sensor capable of locating a direction of a receiving apparatus (**col. 4, line 1**)

46. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Kreft into Goeddel, since Goeddel suggests select a reference signal and do synchronization using this reference signal and Kreft suggests the beneficial of use directional antenna and direct the antenna toward the direction of transmitting station, such as it is obvious to combine because the max. power will be received in the direction of transmitting, they are in the analogues art of communication protocol.

47. Claim 11-12, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goeddel (6546026), as applied to claim 1 above and further in view of Nagashima (6327481).

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48.

As per claim 11, **Goeddel teaches** the diversity receiving apparatus of claim 1, **Goeddel teaches** wherein the master branch determination unit (**Fig. 6, #308**) ...

49. **Goeddel doesn't teach** ... determines a new master branch by selecting the new master branch among branches that can receive signals when the master branch gets into bad receiving condition and it becomes impossible to detect symbol synchronization.

50. **Nagashima teaches** ... determines a new master branch by selecting the new master branch among branches that can receive signals when the master branch gets into bad receiving condition (**col. 9, line 45-50**) and it becomes impossible to detect symbol synchronization (**know as long as more than one branch is received, then synchronization can be done (it may not be accurate), thus for impossible to detect, only one branch is received and that is the new master branch and no synchronization can be done**).

51. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Nagashima into Goeddel, since Goeddel suggests select a reference signal and do synchronization using this reference signal and Nagashima suggests the beneficial of use directional antenna and direct the antenna toward the direction of transmitting station, such as it is obvious to combine

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because the max. power will be received in the direction of transmitting, they are in the analogues art of communication protocol.

52.

As per claim 12, **Goeddel and Nagashima teach** the diversity receiving apparatus of claim 11, **Goeddel teaches** wherein the master branch determination unit stores receiving status data before the master branch gets into bad receiving condition (**Fig. 6, #302, Fig. 6 is under normal condition, since for any wireless communication, no one can know when is the bad condition, thus before bad condition, just mean save the data every time receives**); and determines the new master branch based on the receiving status data (**Fig. 6, #308, note, nothing is changed, since determination of the master branch is still using the old data (before bad receiving condition)**)

53. As per claim 16, **Goeddel teaches** the diversity receiving apparatus of claim 1,

54. **Goeddel doesn't teach** wherein the master branch determination unit determines a new master branch even when it becomes impossible to detect symbol synchronization because the master branch gets into bad receiving condition, and there is no other branch that can receive a signal.

Nagashima teaches wherein the master branch determination unit determines a new master branch even when it becomes impossible to detect symbol synchronization because the master branch gets into bad receiving condition, and there is no other branch that can receive a signal (**know as long as more than one branch is received,**

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then synchronization can be done (it may not be accurate), thus for impossible to detect, only one branch is received and that is the new master branch and no synchronization can be done, to further define impossible to synchronization because the master branch gets into bad condition, is by a threshold, see Fig. 2B, the answer to #S209 is yes and another branch (new branch) is determined).

55. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Nagashima into Goeddel, since Goeddel suggests select a reference signal and do synchronization using this reference signal and Nagashima suggests the beneficial of use directional antenna and direct the antenna toward the direction of transmitting station, such as it is obvious to combine because the max. power will be received in the direction of transmitting, they are in the analogues art of communication protocol.

56. As per claim 20, **Goeddel teaches** the diversity receiving method of claim 19,

57. **Goeddel doesn't teach** wherein the master branch determination step comprises: a step for determining a next candidate for the master branch; and a step for replacing a current master branch with the next candidate for the master branch when the current master branch gets into bad receiving condition.

58. **Nagashima teaches** wherein the master branch determination step comprises: a step for determining a next candidate for the master branch (**Fig. 2B, #S210, it is**

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inherent, that new antenna has to be determined before it can switch to); and a step for replacing a current master branch with the next candidate for the master branch when the current master branch gets into bad receiving condition (**Fig. 2B, #S209, S210**).

59. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goeddel (6546026), Nagashima (6327481) as applied to claim 12 above and further in view Laroia (6961364).

60.

As per claim 14, **Goeddel and Nagashima teach** the diversity receiving apparatus of claim 12, **Goeddel teaches** wherein the master branch determination unit stores, as the receiving status data before the master branch gets into bad receiving condition (**Fig. 6, #302, Fig. 6 is under normal condition, since for any wireless communication, no one can know when is the bad condition, thus before bad condition, just mean save the data every time receives**),

61. **Goeddel and Nagashima doesn't teach** average electric power received by each of the plurality of branches; and determines a branch that has had highest average electric power received before the master branch gets into bad receiving condition to be the new master branch.

62. Laroia teaches average electric power received by each of the plurality of branches; and determines a branch that has had highest average electric power received before the master branch gets into bad receiving condition to be the new

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master branch (**col. 5, line 55-58, since for any wireless communication, no one can know when is the bad condition, thus before bad condition, just mean save the data every time receives**)

63. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Laroia into Goeddel, since Goeddel suggests select a reference signal and do synchronization using this reference signal and Laroia suggests the beneficial use of the strongest average signal to estimation something, such as use strongest signal as reference is obvious, because it usually represent the more accurate signal, they are in the analogues art of communication protocol.

64. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goeddel (6546026), Nagashima (6327481) as applied to claim 12 above and further in view Yamaguchi (5889438).

65.

As per claim 15, **Goeddel and Nagashima teach** the diversity receiving apparatus of claim 12, **Goeddel teaches** wherein the master branch determination unit stores, as the receiving status data before the master branch gets into bad receiving condition (**Fig. 6, #302, Fig. 6 is under normal condition, since for any wireless communication, no one can know when is the bad condition, thus before bad condition, just mean save the data every time receives**),

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66.

Goeddel and Nagashima do not teach fluctuation in electric power received by each of the plurality of branches; and determines a branch that has had least fluctuation in the electric power received before the master branch gets into bad receiving condition to be the new master branch

67. **Yamaguchi teaches** fluctuation in electric power received by each of the plurality of branches; and determines a branch that has had least fluctuation in the electric power received before the master branch gets into bad receiving condition to be the new master branch **(col. 2, line 53-55)**...

Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Yamaguchi into Goeddel, since Goeddel suggests select a reference signal and do synchronization using this reference signal and Yamaguchi suggests the beneficial to select the minimum variance filter, such as select the minimum variance of anything means more stable, and in wireless communication, stable system or signal is more preferred, they are in the analogues art of communication protocol.

Allowable Subject Matter

68. Claim (s) 9, 13 is/are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of

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the base claim and any intervening claims, and if applicant can overcome the claim objection.

Conclusion

c. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FAN NG whose telephone number is (571)270-3690. The examiner can normally be reached on Monday-Friday; 7:30am-5:30pm.

d. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached on (571)272-3011. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

e. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Robert W Wilson/
Primary Examiner, Art Unit 2419